DOCUMENT RESUME

ED 067 047 HE 003 356

TITLE	Survey and Interpretation of Questionnaire Data Regarding Measuring the Output of Universities.
INSTITUTION	Florida Univ., Gainesville.
PUB DATE	72
NOTE	28p.
AVAILABLE FROM	K. J. Shapiro, P.O. Box 12072, University Station, Gainesville, Florida 32601 ($1.00)
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Educational Administration; *Educational Research; *Evaluation Techniques; *Higher Education; Information Processing; Input Output; *Input Output Analysis; Input Output Devices; Institutional Research

ABSTRACT

In the survey entitled "Measuring Output of Institutions of Higher Learning," survey participants were requested to respond to 9 questions concerning the process of measuring the educational and research output of college and universities. The first 5 questions sought to ascertain which of the currently available measures of output are utilized by the individual institutions surveyed and for what purposes they are presently employed. The last 4 questions sought information concerning prevailing attitudes and opinions related to the desirability and feasibility of developing an objective, standardized measure of the output of universities. Comments concerning each question were solicited from participants and this analysis includes the more informative and representative responses received. (Author/HS)

ED 067047

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

Survey and Interpretation of Questionnaire Data Regarding Measuring the Output of Universities

The currently available measures of educational output are defective in several respects. Theoretical inadequacies are evident in several of them, in that they fail to measure "output", focusing their analysis instead upon "inputs" or costs. Others, while actually concerned with measuring output, utilize non-universal bases for measurement, making valid comparison and analysis between institutions an almost impossible process.

Developing a theoretically satisfactory measurement model poses a variety of difficulty problems. The practical implementation of such a process and its application to the widely diversified types of educational institutions existing in this country, presents different, although nontheless equally troublesome difficulties. The ambiguities inherent in these measurements interject obstacles to their practical application which in terms of aggregate and/or comparative analysis, seriously reduce their utility except for internal institutional evalutaion.

Is there then a current need to develop a standardized means by which we can objectively measure educational output? If such a need does exist, is it possible to practically implement a measurement process which meets the aforementioned criteria of comprehensiveness and universal applicability? In order to obtain factual information on current attitudes concerning these questions, a survey was conducted in the latter part of 1971 and the beginning of 1972.

The purpose of the survey was two-fold. First, it sought to ascertain which, if any, of the available measures of educational output are employed by American colleges and universities. In this regard, information was sought concerning 1) the frequency of utilization of the various methods

HE003356

FILMED FROM BEST AVAILABLE COPY

discussed; 2) their application in terms of educational and research output; and 3) the purposes for which the data produced was employed, e.g. planning, budgeting, evaluation, etc. Second, the questionnaire endeavored to ascertain current attitudes concerning the desirability and feasibility of developing a standardized, objective measurement process of the output of institutions of higher learning.

The survey, entitled, "Measuring Output of Institutions of Higher Larning" was sanctioned by the American Council of Education on November 4, 1971. An abstract of the survey appeared in the January, 1972 issue of the Council's monthly publication, Report on Questionnaires. Any correspondence with the Council concerning the survey should refer to questionnaire QR 7167.

The first problem encountered in conducting the survey was to decide to whom, in fact, it should be directed. Almost all of the currently conducted measurement of the output of universities is limited to internal institutional analysis. Within the various institutions this function is usually performed by, or under the auspices,of a high ranking member of the university's administration. Those institutions with sufficient resources often contain within their administrative framework a division or department of planning and institutional research, whose function includes developing and implementing whichever measures of output are utilized by that university. Similar types of analyses are performed in smaller, less affluent institutions either by the university's comptroller or by a presidential aide.

It is often these same personnel who decide which, if any, measures of educational and research output should be utilized. Certainly if a standardized, objective measure is to be developed and implemented on a wide-scale basis, it must meet with the approval of these individuals. It is for these reasons that the decision was made to include in the survey those individuals presently responsible for directing and carrying out the

measurement functions within our institutions of higher learning. The questionnaire was directed then to the president's comptrollers, and planners of one-hundred and twenty colleges and universities within the United States.

In order to obtain a wide range of responses concerning current practices and attitudes, and in view of the divergent types of institutions of higher learning existing in this country, the following procedures were followed in selecting those universities to be surveyed. The nation was divided into quadrants approximating the distribution of universities presently in operation. Each quadrant (northeastern, southern, central and western) included either twelve or thirteen states. Within each state at least one public, state financed institution was randomly selected. The remaining institutions (a total of thirty from each quadrant) were chosen in an effort to solicit responses from as wide a range of participants as possible. In this regard, the following factors of differentiation were utilized in the selection process:

1) financing - public vs. private

2) size of institution - based on enrollment

3) at least two junior colleges were selected from each quadrant

The following tables indicate the final breakdown, by quadrant, of those institutions to which questionnaires were sent, and their response to the solicitation for participation. Of the one hundred and twenty universities and colleges solicited for participation, 72 (60%) participated, 14 (12%) responded but did not participated, and 34 (28%) failed to respond. Those responding but not participating indicated the following reasons for their non-participation:

1. Information requested not available - 6
2. Policy restrictions preclude distribution of information requested - 2

3. Budgetary restrictions preclude participation - 4

4. No reason given for non-participation - 2

Table A indicates the rather equal distribution, by geographical location, of those institutions participating in the survey: northeast = 14; south = 21; west = 20; central = 17. Table B shows the breakdown of participants by the size of the university or college, based on full-time enrollment.and by geographic location.

Survey - Table A

INSTITUTIONS SOLICITIED FOR PARTICIPATION AND THEIR RESPONSE

Total Responses Solicited = 120

(By Quadrant and Type of Financing)

QUADRANT	Number of Institutions Solicited for Participation	%	Response: Participating	Responding but not Participating	Not Responding	% Participating of Those Solicited
Northeast						
Public	14	47%	6	2	6	43%
Private	16	53%	8	4	4	50%
South						
Public	16	53%	11		5	69%
Private	14	47%	10		4	71%
West						
Public	20	67%	15	1	4	75%
Private	10	33%	5	2	3	50%
Central						
Public	20	67%	12	3	5	60%
Private	10	33%	5	2	3	50%
Totals						
Public	70	58%	44	6	20	63%
Private	50	42%	28	8	14	56%
Total	120	100%	72 = 60%	14 = 12%	34 = 28%	

Survey - Table B

PARTICIPANTS
(By Quadrant and Size of Institution)

Quadrant	Less Than 1,000	1,000 - 5,000	5,000 - 10,000	10,000 - 20,000	Over 20,000
Northeast					
Public			3		3
Private	1	5		1	1
West					
Public		2	3	6	4
Private	1	1	1	1	1
Central					
Public		1	3	4	4
Private		4		1	
South					
Public		1	3	4	3
Private		4	5	1	
Totals	2 = 3%	18 = 25%	18 = 25%	18 = 25%	16=22%

Public Institutions Participating	=	44	= 61%
Private Institutions Participating	=	28	= 39%
Total Participants	=	72	= 100%

Analysis of Responses to the Questionnaire

Survey participants were requested to respond to nine questions concerning the process of measuring the educational and research output of institutions of higher learning. The first five questions sought to ascertain which of the currently available measures of output are utilized by the individual institutions surveyed and for what purposes they are presently employed. The last four questions sought information concerning prevailing attitudes and opinions related to the desirability and feasibility of developing an objective, standardized measure of the output of universities. Comments concerning each question were solicited from participants and the following analysis includes the more informative and representative responses received.

Table No. 1

CURRENTLY EMPLOYED MEASURES UTILIZED TO CALCULATE EDUCATIONAL OUTPUT

Survey Question No. 1
And Response

"Which, if any, of the following measures is presently employed by your institution as a means of calculating educational output?

A. Number of student credit hours of instruction
B. Number of degrees awarded
C. Estimates of discounted incremental lifetime earnings of graduates
D. Starting salaries of graduates
E. Others"

Total Response = 72 Institutions*
Public = 44 Institutions
Private = 28 Institutions

NUMBER OF INSTITUTIONS EMPLOYING VARIOUS MEASURES

	Credit Hours	Degrees Awarded	Earnings of Graduates	Starting Salaries	Others**
Public	42 (95%)	35 (80%)	1 (2%)	5 (11%)	7 (16%)
Private	25 (89%)	22 (79%)	0	0	3 (11%)
Totals	67 (93%)	57 (79%)	1 (1%)	5 (7%)	10 (14%)

* 3 of the institutions surveyed (4%) do not attempt to measure educational output

** included:

1) Student-teacher contact hours
2) Professional and leadership achievement of graduates
3) Productivity of faculty
4) Number of graduates continuing in graduate or professional schools, with quality index.
5) Job placement of graduates
6) Professional activities of faculty
7) Follow-up studies of graduates
8) Periodic alumni reviews.

Table No. 2

CURRENTLY EMPLOYED MEASURES UTILIZED TO EVALUATE EDUCATIONAL OUTPUT

Survey Question No. 2
And Response

"Which, if any, of the following measures is presently employed by your institution as a means of evaluating educational output? (Here, evaluating refers to using calculated measures as a means of decision making, e.g. to allocate classroom space to initiate or terminate specific programs, etc.)

A. Number of student credit hours of instruction
B. Number of degrees awarded
C. Estimates of discounted lifetime earnings of graduates
D. Starting salaries of graduates relative to those of other institutions
E. Others"

Total Response	=	72 Institutions*
Public	=	44 Institutions
Private	=	28 Institutions

NUMBER OF INSTITUTIONS EMPLOYING VARIOUS MEASURES

	Credit Hours	Degrees Awarded	Earnings of Graduates	Starting Salaries	Others**
Public	41 (93%)	33 (75%)	0	2 (5%)	9 (20%)
Private	25 (89%)	20 (71%)	0	0	8 (29%)
Totals	66 (92%)	53 (74%)	0	2 (3%)	17 (24%)

* 3 of the institutions surveyed (4%) do not attempt to evaluate educational output.

** included:

1) Full-time equivalent students
2) Full-time equivalent faculty
3) Faculty-student ratios
4) Priority of programs
5) Job placement and success
6) Number of majors and minors served by a department
7) A.C.E. ratings
8) National rankings of graduate programs
9) Evaluations by consultants and planning committee

Table No. 3

CURRENTLY EMPLOYED MEASURES UTILIZED TO EVALUATE RESEARCH OUTPUT

Survey Question No. 3
And Response

"By what means does your institution attempt to evaluate research output of students, faculty and staff?"

A. Number of publications, grants, copyrights, etc.
B. Income from grants, copyrights, patents, etc.
C. Others"

Total Response = 72 Institutions*
Public = 44 Institutions
Private = 28 Institutions

NUMBER OF INSTITUTIONS EMPLOYING VARIOUS MEASURES

	Number of Publications, Grants, Copyrights, Etc.	Income From Grants, Copyrights, Patents	Others**
Public	36 (82%)	23 (52%)	12 (27%)
Private	19 (68%)	7 (25%)	8 (29%)
Totals	55 (76%)	30 (42%)	20 (28%)

* 13 of the institutions surveyed (18%) do not attempt to evaluate research output
** Included:

1) Quality of research work and publications
2) Evaluations of publications by colleagues
3) Benefits of research expressed in dollars (in terms of effect on industry, agriculture, etc.)
4) Number of persons engaged in research
5) Prestige of journals in which publications appear
6) Contributions to university goals
7) Independent evaluations by outside consultants
8) Citations in the literature
9) Number of theses and dissertations
10) Prizes, awards, honors, and subsidized leaves for faculty
11) A.C.E. ratings

Table No. 4

CURRENT EFFORTS DIRECTED AT EVALUATING EDUCATIONAL OUTPUT IN MONETARY TERMS

Survey Question No. 4
And Response

"Is any attempt made by your institution to evaluate educational output (not costs) in monetary terms?"

Total Response = 72 Institutions
Public = 44 Institutions
Private = 28 Institutions

INSTITUTIONS EVALUATING EDUCATIONAL OUTPUT IN MONETARY TERMS

	Yes	No
Public	4 (9%)*	40 (91%)
Private	0	28 (100%)
Totals	4 (6%)	68 (94%)

* Three of four institutions responding in the affirmative to this question indicated that their efforts at evaluating educational output in monetary terms resulted from the implementation of planning-programming-budgeting systems.

Table No. 5

PURPOSES FOR WHICH MEASURES OF EDUCATIONAL AND/OR RESEARCH OUTPUT ARE CURRENTLY EMPLOYED

Survey Question No. 5 And Response

"For which of the following purposes is (are) measures of educational and/or research output currently employed?

A. Budgeting processes - conventional
B. Performance budgeting
C. Planning - Programming - Budgeting Systems
D. Cost - Benefit analysis
E. Evaluations of Past Performance
F. Evaluations of Efficiency
G. Others"

NUMBER OF INSTITUTIONS EMPLOYING OUTPUT MEASURES FOR VARIOUS PURPOSES - PUBLIC VS. PRIVATE

Total Response = 72 Institutions
Public = 44 Institutions
Private = 28 Institutions

	Budgeting-Conventional	Performance Budgeting	P-P-B-S	Cost - Benefit	Evaluations of Past Performance	Efficiency Evaluations	Others**
Public	38 (86%)	12 (27%)	29 (66%)	12 (27%)	20 (45%)	20 (45%)	3 (7%)
Private	21 (75%)	4 (14%)	14 (50%)	8 (29%)	11 (39%)	13 (39%)	0
Totals	59 (82%)	16 (22%)	43 (60%)	20 (28%)	31 (43%)	33 (43%)	3 (4%)

* 7 of the institutions surveyed (10%) reported no utilization of measures of educational and/or research output.
** Included:

1) Space utilization and requirements
2) Evaluation of effectiveness
3) Projections

Table No. 5A

PURPOSES FOR WHICH MEASURES OF EDUCATIONAL AND/OR RESEARCH OUTPUT ARE CURRENTLY EMPLOYED

Survey Question No. 5
Response - Continued

NUMBER OF INSTITUTIONS EMPLOYING OUTPUT MEASURES FOR VARIOUS PURPOSES - ANALYSIS ACCORDING TO ENROLLMENT SIZE OF INSTITUTIONS

Total Response = 72 Institutions*
Enrollment:
- Less than 1,000 = 2 Institutions
- 1,000 - 5,000 = 18 Institutions
- 5,000 - 10,000 = 18 Institutions
- 10,000 - 20,000 = 18 Institutions
- Over 20,000 = 16 Institutions

Enrollment	Budgeting - Conventional	Performance Budgeting	P-P-B-S	Cost - Benefit	Evaluations of Past Performance	Efficiency Evaluations	Others**
Less than 1,000	1 (50%)	0	0	0	0	1 (50%)	0
1,000 - 5,000	13 (72%)	3 (17%)	11 (61%)	8 (44%)	8 (44%)	8 (44%)	0
5,000 - 10,000	16 (89%)	6 (33%)	14 (78%)	3 (17%)	8 (44%)	9 (50%)	2 (11%)
10,000 - 20,000	16 (89%)	3 (17%)	6 (33%)	3 (17%)	8 (44%)	7 (39%)	0
Over 20,000	13 (81%)	4 (25%)	12 (75%)	6 (38%)	7 (44%)	8 (50%)	1 (6%)
Totals	59 (82%)	16 (22%)	43 (60%)	20(28%)	31 (43%)	33 (46%)	3 (4%)

* 7 of the institutions surveyed (10%) reported no utilization of measures of educational and/or research output.

** Included:

1) Space utilization and requirements
2) Evaluation of effectiveness
3) Projections

Table No. 6

POTENTIAL USES OF MEASURES OF THE OUTPUT OF UNIVERSITIES

Survey Question No. 6
And Response

"Which of the following do you consider to be the most important potential use of measures of the output of universities?

A. Budgeting processes - Conventional
B. Performance - Budgeting
C. Planning - Programming - Budgeting - Systems
D. Cost - Benefit Analysis
E. Evaluations of Past Performance
F. Evaluations of Efficiency
G. Others"

Total Response = 72 Institutions
Public = 44 Institutions*
Private = 28 Institutions*

NUMBER OF INSTITUTIONS INDICATING VARIOUS PURPOSES AS THE MOST IMPORTANT POTENTIAL USE OF MEASURES OF THE OUTPUT OF UNIVERSITIES

	Budgeting - Conventional	Performance Budgeting	P-P-B-S	Cost - Benefit	Evaluations of Past Performance	Efficiency Evaluations	Others**
Public	1 (3%)	7 (24%)	22 (76%)	8 (28%)	1 (3%)	4 (14%)	2 (7%)
Private	2 (10%)	3 (14%)	11 (52%)	11 (52%)	3 (14%)	9 (43%)	0
Totals	3 (6%)	10 (20%)	33 (66%)	19 (38%)	4 (8%)	13 (26%)	2 (4%)

* 15 public and 7 private institutions did not indicate a response to this question; percentages, then, are based on responses from 29 public, 21 private, and 50 total institutions.

** Included:

1) Projections and trend analysis
2) Evaluation of effectiveness

Table No. 7

CURRENT NEED TO DEVELOP A STANDARDIZED MEASURE OF THE OUTPUT OF UNIVERSITIES

Survey Question No. 7 And Response

"Do you believe a need currently exists to develop an objective, comprehensive, standardized means of measuring the output of institutions of higher learning?"

Total Response = 72 Institutions
Public = 44 Institutions
Private = 28 Institutions

INSTITUTIONS INDICATING A NEED FOR A STANDARDIZED MEASUREMENT PROCESS

	Yes	No	Not Responding
Public	36 (82%)	8 (18%)	0
Private	23 (82%)	4 (14%)	1 (4%)
Totals	59 (82%)	12 (17%)	1 (1%)

Table No. 7A

CURRENT NEED TO DEVELOP A STANDARDIZED MEASURE OF THE OUTPUT OF UNIVERSITIES

Survey Question No. 7 And Response - Continued

"Do you believe a need currently exists to develop an objective, comprehensive, standardized means of measuring the output of institutions of higher learning?"

RESPONSE ANALYZED ACCORDING TO ENROLLMENT SIZE OF INSTITUTIONS

Total Response = 72 Institutions
Less than 1,000 = 2 Institutions
1,000 - 5,000 = 18 Institutions
5,000 - 10,000 = 18 Institutions
10,000 - 20,000 = 18 Institutions
Over 20,000 = 16 Institutions

Enrollment	Yes	No	Not Responding
Less Than 1,000	2 (100%)	0	0
1,000 - 5,000	15 (83%)	3 (17%)	0
5,000 - 10,000	13 (72%)	4 (22%)	1 (6%)
10,000 - 20,000	15 (83%)	3 (17%)	0
Over 20,000	14 (88%)	2 (12%)	0
	59 (82%)	12 (17%)	1 (1%)

Comments to Question No. 7

Comments received from survey participants regarding this question indicate the existence of three major attitudinal groups expounding divergent opinions concerning the need to develop a comprehensive, objective, standardized measure of the output of institutions of higher learning.

The first group, composed primarily of large, public universities, and almost unanimous in indicating a need for such a standardized measurment process, might best be termed the "accountability school". Proponents of this particular position are of the opinion that the increasing pressure being exerted by local, state, and federal bodies, and the public, will make the development of such a measure an absolute necessity. The attitudes of this group were succinctly summarized by the Director of Institutional Research of a large, public, state university: "In view of todays tight money situation for most institutions of higher education, and State Legislatures' reluctance to increase appropriations, I think this is a necessity in order to justify resource requirements. We need to be able to make interinstitutional comparisons."

The second, and considerably more diverse group, (in terms of enrollment size and financing) although favoring the development of some means by which to measure educational output, objects to a standardized process of measurement. Comments from this group cite the divergence of goals, community roles, and types of educational institutions as indicating the inappropriateness of a standardized measure of output. Proponents of this position advocate instead the development of several measures of output, suitable, in alternative combinations, to the needs of the various institutions.

The third, and somewhat smaller group, opposes the immediate development of such a measure. The basis for their opposition, and the contentions on which it rests, were clearly stated by the Provost of a large, private, Southern university:

"It seems to me that measures of the output of higher education, particularly a single, comprehensive measure, are premature. At present there are a number of instruments which could be used as measures of output - the GRE, CUES, the Institutional Functioning Inventory, head counts of students, head counts of graduates, credit hour production. The last three of these are easy to obtain, and thus are most often used, but they are not sensitive to a whole range of issues - quality, style, appropriateness - with which academicians are usually concerned. The first three and others like them have not been in place long enough at enough institutions to see whether they will work effectively.

Quantification and computerization are improving the operations of institutions of higher learning in various ways. But the burden of proof that these methods can improve decision-making in higher education still lies with those who claim they can. A premature convergence on some single method which does not satisfy those who must use it may do the general movement more harm than good. I believe the first step will be getting in place really sensitive and accurate information systems. Only then will we have the flexibility to try different measures of output to find the most valuable ones."

Table No. 8

FEASIBILITY OF DEVELOPING A STANDARDIZED MEASURE OF THE OUTPUT OF INSTITUTIONS OF HIGHER LEARNING

Survey Question No. 8 And Response

"Do you believe a standardized, objective measure (in monetary terms) of the output of institutions of higher learning can be developed?"

Total Response = 72 Institutions
Public = 44 Institutions
Private = 28 Institutions

	Yes	No	Not Responding
Public	23 (52%)	21 (48%)	0
Private	9 (32%)	17 (61%)	2 (7%)
Totals	32 (44%)	38 (53%)	2 (3%)

Comments to Question No. 8

Several of the affirmative responses to this question were qualified by comments indicating the necessity of developing more than one standardized measure of output stated in monetary terms. Those advocating this position, while favoring the theoretical concept of a measurement in purely economic terms, are of the opinion that in order to initiate a truly comprehensive analysis process, supportive non-monetary measures would also be necessary.

The comments received from those participants answering question No. 8 in the negative, centered their opposition on the supposed dangers surrounding any effort to measure output in non-educational terms. The Director of Institutional Research at a private Northeastern university wrote:

"I cannot speak for the entire college on this matter, but it appears dangerous to measure output in non-educational terms. It is true that there are economic constraints within which a university must operate. However, it is undesirable to substitute monetary variables for genuine educational output measurements, nor is the situation saved by measuring convenient indices such as credit hours, which are low in relevance. 100 credit hours in badly taught courses are not twice as good as 50 in those well taught."

Table No. 9

MEASUREMENT OF OUTPUT AS A THREAT TO TRADITIONAL GOALS OF HIGHER EDUCATION

Survey Question No. 9 And Response

"If a standardized, objective measure (in monetary terms) of the output of universities could be developed, do you visualize it as a potential threat to the "traditional" goals of higher education, i.e., to develop individuality and self expression?'

Total Response = 72 Institutions
Public = 44 Institutions
Private = 28 Institutions

	Yes	No	Not Responding
Public	18 (41%)	25 (57%)	1 (2%)
Private	8 (29%)	14 (50%)	6 (21%)
Totals	26 (36%)	39 (54%)	7 (10%)

Comments to Question No. 9

This question engendered the most numerous, diversified, and opinionated responses received from survey participants. Those respondents expressing the opinion that a standardized, objective measure (in monetary terms), if developed, might threaten the "traditional" goals of higher education, can be further subdivided into two distinct attitudinal groups. The first, in spite of visualizing such a measure as potentially threatening, or perhaps particularly for this reason, still favor the development of this type of analysis mechanism. The attitude of this group was expounded by the President of a Northeastern, private, liberal arts college, who commented: "Yes - but there should be a threat to education - survival is at stake - education must become more business-like in measures of output and productivity."

The views of those survey participants who visualize such a measure as threatening, and for that reason oppose the development of this type of mechanism, are represented by the following three responses, all received from high ranking administrators of relatively large institutions.

"Even though such a measure may have been developed for other purposes, it will be viewed as a threat to the "traditional goals" of education by faculty, etc. Secondly, administrators have a history of using such measures for other than their intended purposes; they could be used as a method for coercing different institutions within a state, or different colleges or departments within an institution, to behave in some desired manner. Third, such a measure would indirectly pose a threat to the individual faculty member's security. This may have some effect on his creativeness, motivation, etc."

"It would perhaps destroy the pluralistic nature of higher education by exercising great pressure for conformity to a standard."

"Any standardized, objective measure (in monetary terms) will, in the long run, develop incentive motives which may cause the potential learner to expend his time and energy in areas directed toward monetary gains rather than professional competence."

The comments of the those respondents who support the development and implementation of a standardized, objective measure of educational output, and who do not view such as mechanism as threatening individual development and self expression, present equally elucidating and convincing arguments.

"The 'traditional' goals of higher education must always be evaluated to ensure that they meet the needs of the present. No method is a threat if it does, in fact, help to accomplish the educational goals of an individual. Educational development in the present, depends so much on the availability of money that any reasonable method of objectively measuring higher learning output would be most helpful in the administration of funds for achieving educational progress."

And finally this comment from the Executive Secretary for Academic Affairs of a private, Church affiliated university:

"...of the great myths of education, perhaps the greatest is that measures of output in the most quantified terms are inimical to the humanistic goals of the universities. It is the job of the academic planner to destroy these myths in constructive fashion. Measurement tempered by humanism is in itself an ideal."

Conclusions from Survey Data

1. An analysis of the survey response to Question No. 1 indicates the widespread utilization of "credit hours" (93%) and "degrees awarded" (79%) as the primary means by which institutions of higher learning calculate their educational output. The high degree of acceptance afforded these two measures is at least partially attributable to the relative ease with which they can be both calculated and understood. This same simplicity of course, lies at the root of the major criticism of their utility - they provided us with only limited information.

2. Although a total of 22% of the survey participants also calculate educational output by at least one means other than those mentioned above, no other single measure is employed by more than five of the universities surveyed. Only 7% of the institutions responding indicated a utilization of "starting salaries of graduates", while the use of a measure based on "discounted lifetime earnings of graduates" was reported by only one university. A list of other presently employed alternative means of calculating educational output, as noted by survey respondents, appears along with Survey-Table No. 1. Regarding these alternative measures, the survey responses indicate a somewhat higher frequency of utilization among public institutions and among those universities with enrollments in excess of 10,000 students.

3. The responses to Question No. 2 closely parallel those received to the preceeding question. "Credit hours" and "degres awarded" are the primary measures utilized by survey participants to evaluate educational output. 24% of the responding universities report the use

of at least one measure in addition to those mentioned above, in their evaluation processes. A listing of these alternative evaluative techniques appears, along with the overall response to this question, on Survey-Table No. 2.

4. The responses to Question No. 3, regarding currently employed methods utilized to evaluate the research output of students, faculty and staff, reveal the insufficiency of commonly accepted, objective measures for this purpose. 93% of the respondents that attempt to evaluate research output measure the number of publications, grants, copyrights, etc. produced by individuals, and 50% consider the income derived from research efforts. Almost all of the survey participants commenting on this problem indicated that, in addition to these evaluative techniques, some subjective analysis of research endeavors was also attempted. A list of these alternative and/or adjunctive measures is found, along with the general response to this question, on Survey-Table No.3.

5. Question No. 4 was designed to ascertain how many, if any, of the respondents currently attempt to evaluate educational output in monetary terms. Although four institutions replied affirmatively, none of these indicated by what means this task is accomplished. This fact, along with the lack of evidence (in the responses to Questions No. 1 and No.2) of the utilization of any such measurement techniques, leads one to suspect that these institutions are in reality measuring costs or input, rather than output. In any case, as reference to Survey-Table No. 4. will clearly indicate, very little effort is currently expended in attempting to evaluate educational output in monetary terms.

6. The response to Survey-Question No. 5 indicates the wide variety of purposes for which measures of educational output are currently employed. Respondents reported that such measures are presently utilized in performing nine different budgeting and/or evaluation procedures. The most frequently performed functions included conventional budgeting processes, planning-programming, budgeting systems, evaluations of past performance, and evaluations of efficiency. As reference to Survey Tables No. 5 and 5A evinces, this breakdown of utilization of measures of output for various purposes holds for all groups surveyed, despite vast differences in financing and student enrollment.

7. Question No. 6 sought information concerning the probable <u>future</u> use of measures of the output of institutions of higher learning. The response indicates that most university administrators surveyed are of the opinion that planning-programming-budgeting-systems and cost-benefit analysis are the most important potential uses of such measures. (See Survey-Table No. 6) Both processes, of course, demand the utilization of accurate and meaningful measures of output, as well as information about inputs and costs. This trend toward the use of more sophisticated budgeting and evaluative techniques, would seem to indicate a present and growing need for equally sophisticated means of measuring the output of universities.

8. The necessity of developing an objective, comprehensive, standardized means of measuring this output was further substantiated by the response received to Question No. 7. Despite several comments questioning the sagacity of utilizing a <u>standardized</u> measure for this purpose, the

great majority of all groups of survey respondents nevertheless favor the developing of an objective, comprehensive measure of output. (See Survey-Table No. 7)

9. Question No. 8 sought information concerning current attitudes regarding the feasibility of developing an objective, standardized measure (in monetary terms) of the output of institutions of higher learning. Although only 44% of the survey participants replied affirmatively, many comments indicated that if such a measure were utilized in combination with other, non-monetary measures, it might provide a useful, and meaningful addition to educational economic analysis. The greater affirmative response among publicly supported universities is very likely the result of increasing economic pressure being exerted by both legislatures and the public upon intitutions of higher learning. For many universities, improved accountability and inter-institutional comparison are becoming an absolute necessity, and indications are that the urgency of the situation will increase with the passage of time.

10. Question No. 9 sought to ascertain current attitudes regarding the feasibility of implementing a standardized, objective measure of universities' output. Certainly, if such a process is ever to gain wide acceptance, it must meet with the approval of those whose work is to be evaluated. This question, then, inquired as to whether the development of such a measure would be a threat to the "traditional" goals of higher education, i.e., to develop individuality and self-expression. A majority (54%) were of the opinion that the attainment of these goals would not be adversely affected by the utilization of such a measurement process. Several respondents, in fact, commented that the development and

implementation of a standardized, objective means of measuring educational output would compliment such goals. The conclusion that the implementation of this type of analytic tool is feasible is further supported by the fact that several of those who visualize such a measure as a threat to "traditional" education would favor its implementation for exactly that reason.